JACOB MORGAN

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Austin, Texas · [Phone Number Removed]

EXPERIENCE

Amazon Web Services, Annapurna Labs MLA – *Validation and Verification Engineer*, Austin   November 2021 –
- Developed and deployed fleet-wide metrics for Annapurna Labs ML accelerators, giving direct visibility into failures at scale
- Root caused AWS Nitro control plane crashes, resolving kernel memory space corruption
- Owned manufacturing testing and automation for server level testing of all Annapurna accelerator platforms
- Designed, architected, threat-modeled, and deployed an internal Jenkins instance, using CDK to describe infrastructure
- Performed validation and debugging on AWS server platforms, from firmware to BIOS, PCIe, and control plane
- Worked with JDM, ODM and internal design teams on cross-boundary triaging, debugging, and resolving issues
- Updated and documented internal tooling and processes, working across teams to bring improve internal dev-ex
- Automated test fixture bringup, configuration, and artifact management, reducing multiple hour setup to minutes, resolving config/artifact drift, and minimizing toil
- Planned, threat modeled, implemented and managed a secure customer development experience for pre-production hardware
- Performed validation on AWS FPGA accelerator cards (EC2 F1 instance type)
- Identified hidden runtime failures, developed metrics to identify them, and deployed the fix to 1 million plus servers

Texas A&M University System, Security Operations Center – *Network Analyst*, College Station   Jan. 2019 – July 2021
- Monitored network for malicious activity and respond to events as part of an Incident Response team for entire TAMUS, which includes 11 universities and 8 partner agencies
- Led a project to automate classification of known behaviors and to provide enhanced information to network analyst team, reducing toil and increasing accuracy (Threat Intel matching with Cisco Umbrella/Investigate integrating with Jira/Vectra AI)

Silicon Labs, IoT – *Validation Engineer Intern*, Austin   Summer 2020, Summer 2021
- Developed lab automation software to increase existing test coverage of Silicon Labs devices in a cost effective, automated and easily extensible fashion
- Developed a low cost system to emulate expensive test equipment with COTS hardware to improve the accessibility of the Silicon Labs Automated Testing Environment for use in wide scale CI/CD
- Worked in a lab environment to characterize pre and post-production Silicon Labs Wireless MCUs using Labview automation
- Developed a webapp using Javascript to display realtime information from test equipment, implementing a client to a HTTP API on a vendor's device

SKILLS

Programming Languages: Python, C/C++, Lua, Make, ARM64 Assembly/Architecture, Verilog, Bash/shell, JS/HTML, Unit/ Integration Testing, CDK/Cloudformation

Operating Systems: Linux (Ubuntu, Debian), Busybox Linux Embedded, BSD, Windows, MacOS

Systems and Software: AWS/Cloud, Atmel MCU, Git, Jenkins CI/CD, Linux Kernel Development, Vivado, NetBox, Ansible, SystemD, Splunk SIEM, Vectra AI, Cisco Umbrella

Lab: Device bringup, networking, Soldering and board rework (THT, SMD, Hot-Air), Logic Analyzer, Oscilloscope, VNA, bricked server resuscitation

Interests: Hiking, Camping, Reading, Amateur Radio, Creative-Writing, SCUBA Diving

EDUCATION

Texas A&M University - *Bachelors of Science in Electrical Engineering, Computer Science Minor*   Spring 2021
Texas A&M University - Engineering Honors   Spring 2017

CERTIFICATIONS AND AWARDS

Completed apprenticeship as **Cyber Security Support Technician**, Department of Labor   August 2021
MITRE eCTF: UAV Package Delivery System, 2nd Place (Team)   Spring 2021
PADI Open Water Diver   June 2021
PADI Enriched Air Diver   December 2021

LEADERSHIP EXPERIENCE AND ACTIVITIES

Texas A&M Amateur Radio Club – *President*   Spring 2017 - Spring 2020
- Handled and coordinated all administrative activities for the club
- Scheduled outreach events with other clubs through Laurel VEC (TAMU Stormchasers, TAMU Rocketry Team)
- Solicited and secured club sponsorships from corporate and local businesses